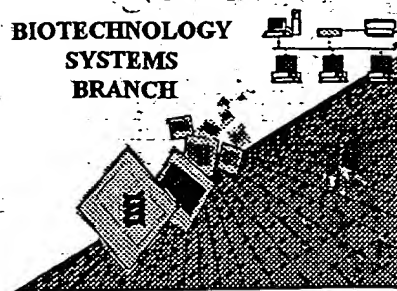


RAW SEQUENCE LISTING **ERROR REPORT**

BIOTECHNOLOGY
SYSTEMS
BRANCH



02 D O
DT
01-22-C

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/606,129

Source: O/PE

Date Processed by STIC: 7/12/2000

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR FURTHER INFORMATION, PLEASE TELEPHONE MARK SPENCER, 703-308-4212.

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 3.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW:

Checker Version 3.0

The Checker Version 3.0 application is a state-of-the-art Windows based software program employing a logical and intuitive user-interface to check whether a sequence listing is in compliance with format and content rules. Checker Version 3.0 works for sequence listings generated for the original version of 37 CFR §§1.821 – 1.825 effective October 1, 1990 (old rules) and the revised version (new rules) effective July 1, 1998 as well as World Intellectual Property Organization (WIPO) Standard ST.25.

Checker Version 3.0 replaces the previous DOS-based version of Checker, and is Y2K-compliant. Checker allows public users to check sequence listings in Computer Readable form (CRF) before submitting them to the United States Patent and Trademark Office (USPTO). Use of Checker prior to filing the sequence listing is expected to result in fewer errored sequence listings, thus saving time and money.

Checker Version 3.0 can be down loaded from the USPTO website at the following address:

<http://www.uspto.gov/web/offices/pac/checker>

OIPE

RAW SEQUENCE LISTING DATE: 07/12/2000
 PATENT APPLICATION: US/09/606,129 TIME: 10:58:14

Input Set : A:\U607921.app
 Output Set: N:\CRF3\07122000\I606129.raw

3 <110> APPLICANT: Maines, Mahin D.
 5 <120> TITLE OF INVENTION: BILIVERDIN REDUCTASE FRAGMENTS AND VARIANTS, AND
 6 METHODS OF USING BILIVERDIN REDUCTASE AND SUCH
 7 FRAGMENTS AND VARIANTS
 9 <130> FILE REFERENCE: 176/60792
 C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/606,129
 C--> 12 <141> CURRENT FILING DATE: 2000-06-28
 14 <150> PRIOR APPLICATION NUMBER: 60/141,309
 15 <151> PRIOR FILING DATE: 1999-06-28
 17 <150> PRIOR APPLICATION NUMBER: 60/163,223
 18 <151> PRIOR FILING DATE: 1999-11-03
 20 <160> NUMBER OF SEQ ID NOS: 37
 22 <170> SOFTWARE: PatentIn Ver. 2.1
 24 <210> SEQ ID NO: 1
 25 <211> LENGTH: 296
 26 <212> TYPE: PRT
 27 <213> ORGANISM: Homo sapiens
 29 <400> SEQUENCE: 1
 30 Met Asn Ala Glu Pro Glu Arg Lys Phe Gly Val Val Val Val Gly Val
 31 1 5 10 15
 33 Gly Arg Ala Gly Ser Val Arg Met Arg Asp Leu Arg Asn Pro His Pro
 34 20 25 30
 36 Ser Ser Ala Phe Leu Asn Leu Ile Gly Phe Val Ser Arg Arg Glu Leu
 37 35 40 45
 39 Gly Ser Ile Asp Gly Val Gln Gln Ile Ser Leu Glu Asp Ala Leu Ser
 40 50 55 60
 42 Ser Gln Glu Val Glu Val Ala Tyr Ile Cys Ser Glu Ser Ser Ser His
 43 65 70 75 80
 45 Glu Asp Tyr Ile Arg Gln Phe Leu Asn Ala Gly Lys His Val Leu Val
 46 85 90 95
 48 Glu Tyr Pro Met Thr Leu Ser Leu Ala Ala Ala Gln Glu Leu Trp Glu
 49 100 105 110
 51 Leu Ala Glu Gln Lys Gly Lys Val Leu His Glu Glu His Val Glu Leu
 52 115 120 125
 54 Leu Met Glu Glu Phe Ala Phe Leu Lys Lys Glu Val Val Gly Lys Asp
 55 130 135 140
 57 Leu Leu Lys Gly Ser Leu Leu Phe Thr Ser Asp Pro Leu Glu Glu Asp
 58 145 150 155 160
 60 Arg Phe Gly Phe Pro Ala Phe Ser Gly Ile Ser Arg Leu Thr Trp Leu
 61 165 170 175
 63 Val Ser Leu Phe Gly Glu Leu Ser Leu Val Ser Ala Thr Leu Glu Glu
 64 180 185 190
 66 Arg Lys Glu Asp Gln Tyr Met Lys Met Thr Val Cys Leu Glu Thr Glu
 67 195 200 205
 69 Lys Lys Ser Pro Leu Ser Trp Ile Glu Glu Lys Gly Pro Gly Leu Lys
 70 210 215 220
 72 Arg Asn Arg Tyr Leu Ser Phe His Phe Lys Ser Gly Ser Leu Glu Asn

see P.5
 Does Not Comply
 Corrected Diskette Needed

RAW SEQUENCE LISTING

DATE: 07/12/2000

PATENT APPLICATION: US/09/606,129

TIME: 10:58:14

Input Set : A:\U607921.app

Output Set : N:\CRF3\07122000\I606129.raw

```

73 225          230          235          240
75 Val Pro Asn Val Gly Val Asn Lys Asn Ile Phe Leu Lys Asp Gln Asn
76          245          250          255
78 Ile Phe Val Gln Lys Leu Leu Gly Gln Phe Ser Glu Lys Glu Leu Ala
79          260          265          270
81 Ala Glu Lys Lys Arg Ile Leu His Cys Leu Gly Leu Ala Glu Glu Ile
82          275          280          285
84 Gln Lys Tyr Cys Cys Ser Arg Lys
85          290          295
88 <210> SEQ ID NO: 2
89 <211> LENGTH: 1070
90 <212> TYPE: DNA
91 <213> ORGANISM: Homo sapiens
93 <400> SEQUENCE: 2
94 ggggtggcgc cgggagctgc acggagagcg tgcccgtcag tgaccgaaga agagaccaag 60
95 atgaatgcag agcccgagag gaagtttggc gtggtggtgg ttggtgttgg ccgagccggc 120
96 tccgtgcgga tgagggactt gcggaatcca cacccttcct cagcgttctt gaacctgatt 180
97 ggcttcgtgt cgagaaggga gctcgggagc attgatggag tccagcagat ttctttggag 240
98 gatgctcttt ccagccaaga ggtggaggtc gcctatatct gcagtgaag ctccagccat 300
99 gaggactaca tcaggcagtt ccttaatgct ggcaagcacg tccttgttga ataccctatg 360
100 acactgtcat tggcgggcgc tcaggaaactg tgggagctgg ctgagcagaa aggaaaaagtc 420
101 ttgcacgagg agcatgttga actcttgatg gaggaattcg ctttctctga aaaagaagtg 480
102 gtggggaaaag acctgctgaa agggctgctc ctcttcacat ctgaccctgt ggaagaagac 540
103 cggtttggtt tccctgcatt cagcggcatc tctcgactga cctggctggt ctccctcttt 600
104 ggggagcttt ctcttgtgtc tgccactttg gaagagcgaa aggaagatca gtatatgaaa 660
105 atgacagtgt gtctggagac agagaagaaa agtccactgt catggattga agaaaaagga 720
106 cctggtctaa aacgaaaacag atatttaagc ttccatttca agtctgggtc cttggagaat 780
107 gtgccaaatg taggagttaa taagaacata tttctgaaag atcaaaatat atttgtccag 840
108 aaactcttgg gccagttctc tgagaaggaa ctggctgctg aaaagaaacg catcctgcac 900
109 tgccctggggc ttgcagaaga aatccagaaa tattgctgtt caaggaagta agaggaggag 960
110 gtgatgtagc acttccaaga tggcaccagc atttggttct tctcaagagt tgaccattat 1020
111 ctctattctt aaaattaaac atgttgggga aacaaaaaaa aaaaaaaaaa 1070
114 <210> SEQ ID NO: 3
115 <211> LENGTH: 296
116 <212> TYPE: PRT
117 <213> ORGANISM: Homo sapiens
119 <400> SEQUENCE: 3
120 Met Asn Thr Glu Pro Glu Arg Lys Phe Gly Val Val Val Val Gly Val
121 1 5 10 15
123 Gly Arg Ala Gly Ser Val Arg Met Arg Asp Leu Arg Asn Pro His Pro
124 20 25 30
126 Ser Ser Ala Phe Leu Asn Leu Ile Gly Phe Val Ser Arg Arg Glu Leu
127 35 40 45
129 Gly Ser Ile Asp Gly Val Gln Gln Ile Ser Leu Glu Asp Ala Leu Ser
130 50 55 60
132 Ser Gln Glu Val Glu Val Ala Tyr Ile Cys Ser Glu Ser Ser Ser His
133 65 70 75 80
135 Glu Asp Tyr Ile Arg Gln Phe Leu Asn Ala Gly Lys His Val Leu Val
136 85 90 95

```

RAW SEQUENCE LISTING

DATE: 07/12/2000

PATENT APPLICATION: US/09/606,129

TIME: 10:58:14

Input Set : A:\U607921.app

Output Set: N:\CRF3\07122000\I606129.raw

```

138 Glu Tyr Pro Met Thr Leu Ser Leu Ala Ala Ala Gln Glu Leu Trp Glu
139      100      105      110
141 Leu Ala Glu Gln Lys Gly Lys Val Leu His Glu Glu His Val Glu Leu
142      115      120      125
144 Leu Met Glu Glu Phe Ala Phe Leu Lys Lys Glu Val Val Gly Lys Asp
145      130      135      140
147 Leu Leu Lys Gly Ser Leu Leu Phe Thr Ala Gly Pro Leu Glu Glu Glu
148 145      150      155      160
150 Arg Phe Gly Phe Pro Ala Phe Ser Gly Ile Ser Arg Leu Thr Trp Leu
151      165      170      175
153 Val Ser Leu Phe Gly Glu Leu Ser Leu Val Ser Ala Thr Leu Glu Glu
154      180      185      190
156 Arg Lys Glu Asp Gln Tyr Met Lys Met Thr Val Cys Leu Glu Thr Glu
157      195      200      205
159 Lys Lys Ser Pro Leu Ser Trp Ile Glu Glu Lys Gly Pro Gly Leu Lys
160      210      215      220
162 Arg Asn Arg Tyr Leu Ser Phe His Phe Lys Ser Gly Ser Leu Glu Asn
163 225      230      235      240
165 Val Pro Asn Val Gly Val Asn Lys Asn Ile Phe Leu Lys Asp Gln Asn
166      245      250      255
168 Ile Phe Val Gln Lys Leu Leu Gly Gln Phe Ser Glu Lys Glu Leu Ala
169      260      265      270
171 Ala Glu Lys Lys Arg Ile Leu His Cys Leu Gly Leu Ala Glu Glu Ile
172      275      280      285
174 Gln Lys Tyr Cys Cys Ser Arg Lys
175      290      295
178 <210> SEQ ID NO: 4
179 <211> LENGTH: 295
180 <212> TYPE: PRT
181 <213> ORGANISM: Rattus norvegicus
183 <400> SEQUENCE: 4
184 Met Asp Ala Glu Pro Lys Arg Lys Phe Gly Val Val Val Val Gly Val
185 1      5      10      15
187 Gly Arg Ala Gly Ser Val Arg Leu Arg Asp Leu Lys Asp Pro Arg Ser
188      20      25      30
190 Ala Ala Phe Leu Asn Leu Ile Gly Phe Val Ser Arg Arg Glu Leu Gly
191      35      40      45
193 Ser Leu Asp Glu Val Arg Gln Ile Ser Leu Glu Asp Ala Leu Arg Ser
194      50      55      60
196 Gln Glu Ile Asp Val Ala Tyr Ile Cys Ser Glu Ser Ser Ser His Glu
197 65      70      75      80
199 Asp Tyr Ile Arg Gln Phe Leu Gln Ala Gly Lys His Val Leu Val Glu
200      85      90      95
202 Tyr Pro Met Thr Leu Ser Phe Ala Ala Ala Gln Glu Leu Trp Glu Leu
203      100      105      110
205 Ala Ala Gln Lys Gly Arg Val Leu His Glu Glu His Val Glu Leu Leu
206      115      120      125
208 Met Glu Glu Phe Glu Phe Leu Arg Arg Glu Val Leu Gly Lys Glu Leu
209      130      135      140

```

PATENT APPLICATION: US/09/606,129

TIME: 10:58:14

Output Set: N:\CRF3\07122000\I606129.raw

211	Leu	Lys	Gly	Ser	Leu	Arg	Phe	Thr	Ala	Ser	Pro	Leu	Glu	Glu	Glu	Arg
212	145					150					155					160
214	Phe	Gly	Phe	Pro	Ala	Phe	Ser	Gly	Ile	Ser	Arg	Leu	Thr	Trp	Leu	Val
215					165						170					175
217	Ser	Leu	Phe	Gly	Glu	Leu	Ser	Leu	Ile	Ser	Ala	Thr	Leu	Glu	Glu	Arg
218					180						185					190
220	Lys	Glu	Asp	Gln	Tyr	Met	Lys	Met	Thr	Val	Gln	Leu	Glu	Thr	Gln	Asn
221					195						200					205
223	Lys	Gly	Leu	Leu	Ser	Trp	Ile	Glu	Glu	Lys	Gly	Pro	Gly	Leu	Lys	Arg
224					210						215					220
226	Asn	Arg	Tyr	Val	Asn	Phe	Gln	Phe	Thr	Ser	Gly	Ser	Leu	Glu	Glu	Val
227	225					230						235				240
229	Pro	Ser	Val	Gly	Val	Asn	Lys	Asn	Ile	Phe	Leu	Lys	Asp	Gln	Asp	Ile
230					245						250					255
232	Phe	Val	Gln	Lys	Leu	Leu	Asp	Gln	Val	Ser	Ala	Glu	Asp	Leu	Ala	Ala
233					260						265					270
235	Glu	Lys	Lys	Arg	Ile	Met	His	Cys	Leu	Gly	Leu	Ala	Ser	Asp	Ile	Gln
236					275											285
238	Lys	Leu	Cys	His	Gln	Lys	Lys									
239					290											295
242	<210> SEQ ID NO: 5															
243	<211> LENGTH: 1081															
244	<212> TYPE: DNA															
245	<213> ORGANISM: Rattus norvegicus															
247	<400> SEQUENCE: 5															
248	gg	tca	cac	agc	g	ta	agt	ga	agc	ca	tat	at	cc	ata	gag	agt
249	aa	ctc	tgt	ctg	c	tg	tct	tc	gga	c	act	gac	tga	g	ag	cca
250	ga	aat	ttt	gga	g	tg	gtg	tat	gg	c	aga	gct	ggc	t	ga	ggg
251	ga	agg	gat	tcca	c	gc	tct	g	cag	c	att	ctc	tga	a	gac	ga
252	tg	gg	ag	agc	t	gat	aa	gt	ac	g	gc	cag	at	ttc	g	cca
253	tc	gat	gt	ctgc	c	at	tatt	tc	ga	g	tg	gag	agt	tc	gg	cag
254	gc	agg	ct	ggc	g	aa	gcat	gt	tc	c	tc	gt	gga	ata	cg	gc
255	ga	gct	gt	g	g	ag	ct	g	ggc	g	ca	cag	aaa	agg	gag	ag
256	ctt	gat	gg	ag	g	aa	ttc	g	ga	a	g	aa	g	t	g	g
257	gt	ct	tct	tc	g	tc	ac	ag	t	a	g	cc	c	act	gga	g
258	cg	g	at	tt	ct	c	gc	ct	g	a	cc	t	g	g	ct	c
259	ca	act	tt	gga	g	gc	g	aaa	agg	a						

VERIFICATION SUMMARY

DATE: 07/12/2000

PATENT APPLICATION: US/09/606,129

TIME: 10:58:15

Input Set : A:\U607921.app

Output Set: N:\CRF3\07122000\I606129.raw

L:11 M:270 C: Current Application Number differs, Replaced Application Number
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:284 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:303 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:336 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:339 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:386 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:433 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15
L:452 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:471 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17